**PATENT** 

Attorney Docket No.: SHIM1130

Applicant: Serial No.:

Toshio Miyata 10/089,789

Filed:

August 19, 2002

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## **AMENDMENTS**

## **Amendments to the Claims**

Please cancel claims 1-6, 8, 10-11, and 13-14 without prejudice.

Please amend claims 7, 9, 12 and 15 as follows:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Upon entry of the present amendment, the claims will stand as follows:

Claims 1-6 (Cancelled)

7. (Currently amended) [[The]] A carrier of claim 3 on which one or more biguanide agents have been immobilized, wherein the shape of the carrier is selected from the group consisting of: membranous, fibrous, granular-shaped, hollow fiber-like, non-woven fabric-like, porous, and honeycomb-shaped carrier.

Claim 8. (Cancelled)

9. (Currently amended) [[The]] A carrier of claim 3 comprising one or more biguanide agent immobilized thereon, wherein the carrier is a hemodialysis membrane.

Claims 10-11. (Cancelled)

12. (Currently amended) A peritoneal dialysate solution comprising the carbonyl stress-decreasing agent biguanide agent of claim 1 one or more biguanide agent or pharmacologically acceptable salt thereof.

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Claims 13-14 (Cancelled)

15. (Currently Amended) [[The]] A method of claim 14, for removing carbonyl compounds comprising contacting a carrier on which a biguanide agent has been immobilized, with one or more body fluid selected from one or more of blood, blood plasma and peritoneal dialysate, wherein the blood purification [[step]] comprises one or more steps selected from the group consisting of: blood filtration, blood filtration dialysis, blood adsorption, and blood plasma separation.

Please add the following new claims 16-38:

- 16. (New) The carrier of claim 7, wherein the biguanide agent is a compound selected from phenformin, metformin, buformin, and pharmacologically acceptable salts thereof.
- 17. (New) The carrier of claim 7, wherein the carrier has a body fluid contact area that can be controlled by altering one or more parameter selected from thickness, surface area, diameter, length, shape, and size of the carrier.
- 18. (New) The carrier of claim 7, wherein the biguanide agent is immobilized on the carrier by a reaction selected from physical adsorption, a specific biochemical binding reaction, ion binding, covalent bonding, or grafting.
  - 19. (New) A peritoneal dialysate solution comprising the carrier of claim 7.
- 20. (New) The carrier of claim 9, wherein the biguanide agent is a compound selected from one or more of phenformin, metformin, buformin, and pharmacologically acceptable salts thereof.

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21. (New) The peritoneal dialysate solution of claim 12, wherein the biguanide agent is one or more compound selected from phenformin, metformin, buformin, and pharmacologically acceptable salts thereof.

- 22. (New) The method of claim 15, wherein the biguanide agent is one or more compound selected from phenformin, metformin, buformin, and pharmacologically acceptable salts thereof.
- 23. (New) A carrier on which a biguanide agent has been immobilized, wherein the biguanide agent remains immobilized when contacted with blood, blood plasma or peritoneal dialysate.
- 24. (New) The carrier of claim 23, wherein the biguanide agent is selected from one or more of phenformin, metformin, buformin, and pharmacologically acceptable salts thereof.
- 25. (New) The carrier of claim 23, wherein the carrier is selected from one or more of synthetic or naturally-occurring organic macro-molecular compounds, inorganic material and materials coated with polysaccharide(s) and synthetic polymer(s) thereof.
- 26. (New) The carrier of claim 25, wherein the inorganic compounds are selected from one or more of glass beads, silica gel, alumina and activated charcoal.
  - 27. (New) The carrier of claim 25, wherein the carrier is an inorganic material.
- 28. (New) The carrier of claim 25, wherein the carrier is a synthetic organic macro-molecular compound.
- 29. (New) The carrier of claim 25, wherein the carrier has a body fluid contact area that can be controlled by changing one or more parameters selected from thickness, surface area, diameter, length, shape, and size of the carrier.

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- 30. (New) The carrier of claim 23, wherein the biguanide agent is immobilized on the carrier by a reaction selected from one or more of physical adsorption, a specific biochemical binding reaction, ion binding, covalent bonding, or grafting.
  - 31. (New) A peritoneal dialysate solution comprising the carrier of claim 23.
- 32. (New) A method for removing carbonyl compounds comprising contacting the carrier of claim 23 with one or more body fluids selected from blood, blood plasma and peritoneal dialysate.
- 33. (New) The method of claim 32, wherein the removal of the carbonyl compounds is carried out during *in vivo* or *ex vivo* blood purification.
- 34. (New) A method for removing carbonyl compounds comprising contacting one or more biguanide agent with one or more body fluid selected from blood, blood plasma and peritoneal dialysate.
- 35. (New) The method of claim 34, wherein the biguanide agent is selected from one or more of phenformin, metformin, buformin, and pharmacologically acceptable salts thereof.
- 36. (New) The method of claim 34, wherein the removal of the carbonyl compounds is carried out during *in vivo* or *ex vivo* blood purification.
  - 37. (New) The method of claim 34, wherein the biguanide agent is orally administered.
- 38. (New) The method of claim 34, wherein the biguanide agent is administered by injection.